PCC 77

Kent-Moore
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# Random Access Memory boards 4K, 8K and fast 8K

The new Kent-Moore static memory boards, 4K, 8K and fast 8K, share the same outstanding features. Because their static memories do not need refreshing, speed of actual operation is much faster than dynamic designs. The 4 and 8K give you access times of 500 nano-seconds, the fast 8K(Z) cut that time down to 250 ns!

Because of the low power memory chips used, power requirements are lower than many other RAM boards. And the 8K RAM uses less power than two 4K boards. All RAMs are manufactured to military specification MIL STD-883-C, assuring greatest control over reliability.

Address selection is easily accomplished by our Visaddress,™ an easy to read switch on the board top. The 8K board is designed to be selected as one of eight possible 8K RAM boards present on the S-100 bus. (The 4K, as one of sixteen possible 4K RAMs.)

To achieve address selection, the top address lines are decoded using the Visaddress switch. The switch will then show the selected starting address of the RAM card. (i.e. $\emptyset = \emptyset\emptyset\emptyset\emptyset - 1FFF$, $2 = 2\emptyset\emptyset\emptyset - 3FFF$, etc. on the 8K board).

The 4K RAM board also has a positive, on-board hardware switch for "Write Protect." When the switch is in the Protect position, the memory array cannot be written into and will act similar to a ROM. All boards have fully buffered address and data lines, and extensive built-in noise immunity circuitry.
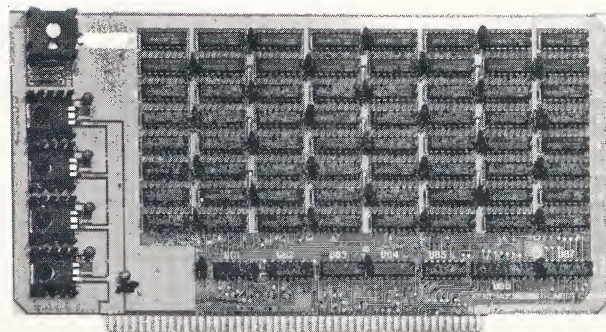
SPECIFICATIONS

Maximum Capacity: 4K 4096 8-bit bytes
8K 8192 8-bit bytes

Operating Mode: Static, 2102 AL type RAMs

Access and Cycle Times: 500 nano-seconds worst-case maximum, 0°-70°C, read or write; 400 nsec. typical. 8K (Z) 250 ns, worst case maximum.

Bus Pinout: Plug-in compatible with Sol System, Altair 8800 and IMSAI 8080 bus (S-100)

Edge Contacts: Gold-plated, 100 pins (dual 50) on .125″ centers.

Power Requirements: 8K: +6 to +10 VDC at 1.5A typical 1.9A maximum
4K: +6 to +10 VDC at 734 MA typical 1.05A maximum

Address Selection: Visaddress switch at top of PC board allows manual selection of any 8K segment. (4K segment on 4K RAM).

Dimensions: 5.3″ x 10″ (13.46 cm x 25.4 cm)

4K RAM (PART NO. 60082) $107.00

8K RAM (PART NO. 60085) $197.50

8K (Z) RAM (PART NO. 60085Z) $217.50

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Alpha-Video Display Module

The Alpha-VDM generates sixteen 32-character lines in a large easy-to-read format with both upper and lower case letters. It contains 1K. (1024) bytes of random access memory, to which the processor can read or write, just as though the memory were an integral part of the system. As the information is written, the contents of this on-card memory are displayed instantly without interrupting the operation of the processor.

All timing required to generate a standard video signal is provided by a crystal oscillator and associated digital circuitry. Centering of the display on the monitor screen is controlled by drift-free counter logic.

The 1K by 8 static display memory buffer is directly addressable as RAM on the S-100 bus. Displaying data on the screen is accomplished by moving the data to be displayed in the first 512 bytes of the Alpha-VDM memory. Therefore the display update is essentially instantaneous. Output routines can make use of all Memory Reference instruction, including one byte moves. (i.e. MOV M, reg.) Multiple programmable cursor circuitry is built in. All 5 cursors can be displayed at one time, and anywhere in the display. Thus, the VDM can display white-on-black or black-on-white — perfect for many video games! The VDM also features EIA Video output for any standard video monitor, or a TV repair shop can easily modify your own set.

The VDM comes with free terminal mode software, designed for teletype replacement.
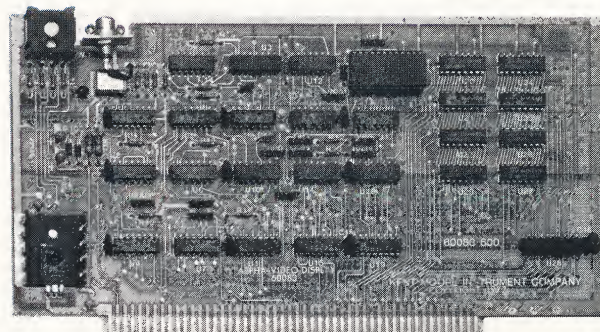
SPECIFICATIONS

Display Format	16 lines of 32 characters, upper and lower case, with descenders. Control characters visible as abbreviations. See options.
Output	EIA composite video, 1vpp nominal, 75 ohms 3.4 Mhz.
Input	ASCII data written into RAM memory on card. Bit 7 sets cursor at character location. Processor may read contents of on-card. RAM memory. RAM contains 1024 bytes. (512 on screen)
Cursor	Solid video inversion block (black character on white background) superimposed over each character having bit 7 set to "1."
Address Selection	Any 1K page may be selected for memory address. Selection is performed by Visaddress™ switch on card.
Power	506 MA nominal Vcc, 6V to 10V 712 MA Maximum Vcc, 6V to 10V
Options	3 fonts available, (A: Graphics font, B: Greek font, C: ASCII Control font) Logic Sync. generator for crystal controlled stability
Physical Dimensions	5/3" x 10.0" (13.46 cm x 25.4 cm)
Bus Pinout	Plug-in compatible with Altair 8800 or IMSAI 8080 bus. (S-100).

Alpha-Video Display Module (PART NO. 60083A, B or C) $107.00

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Graphics-Video Display Module

The Graphics-VDM will display a black and white array of 96 high by 128 wide dots on a standard video monitor or modified TV. This design allows 128H x 96V resolution for bit mapped graphic displays and a straight-forward approach to dynamic graphics. All timing required to generate a standard video signal is provided by a crystal oscillator and associated digital circuitry. Centering of the display on the monitor screen is controlled by drift-free counter logic.

The 12K bit static display memory buffer is directly addressable as dual port RAM on the S-100 bus. The display memory is located in the first 6K of the 8K memory address space selected by the Visaddress™ switch. Locating all of the memory required to display data on the Graphics-VDM board allows the processor to continue computing while the display is running.

To prevent interference from appearing on the video monitor during a VDM screen update, a lockout feature is incorporated which will force the CPU to WAIT if the display is addressed while the screen is unblanked.

A unique display data format, in which each byte of display memory addresses a cell of 2 dots allows black and white and color software to be interchanged. When reading data points, all four bits of each dot are set to reflect "dot on/dot off" status.
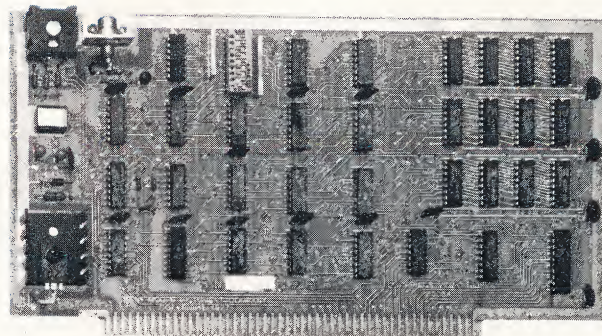
SPECIFICATIONS

Access Time:	250ns Max — No wait states if screen update sync disabled.
Memory chip:	2102AL Type, 250ns access time, 100% Tested to MIL-STD 883 class C
Address Select:	Visaddress™ switch accessible from top of board, allows the Graphics-VDM memory to appear at one of 8 possible 8K locations.
Power Required:	641 MA nominal, Vcc 6v to 10v 30 MA nominal, Supply −12V to −20V 786 MA MAX, Vcc 6v to 10v 63 MA MAX, −Supply −12v to −20v
Board:	5.3″ x 10.0″ (13.46cm x 25.4cm)
Bus Pinout:	Plug-in compatible with Altair 8800 of IMSAI 8080 bus (S-100).

Graphics-Video Display Module (PART NO. 60084) $137.00